MAGMATIC AND STRATIGRAPHIC EVOLUTION OF A PALEO/MESO PROTEROZOIC SYN-RIFT TO POST-RIFT BASIN: EXAMPLE OF THE ARAÍ BASIN, BRAZIL.

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Supracrustal rocks of Araí Basin (Araí Group) and coeval within plate magmatism are related to a complex continental extensional structure developped between approximately 1800 Ma and 1600 Ma in the middle of Brazil (Goiás and Tocantins states). The Araí Basin evolved in response to NNE-SSW directed extension which began before ~ 1770 Ma and ceased about ~ 1574 - 1616 Ma. This extension was followed by regional post rift subsidence evolved until an unknown age in the Mesoproterozoic. Syn-rift sedimentation and magmatism are preserved at the eastern margin of the Araí Basin. Initial syn-rift sedimentation is represented by fluvial and eolian deposits, which are hardly affected by faulting. The main rift phase was accompained by deposition of alluvial fan conglomerates and sandstones, and fluvial sandstones which can be intercalated by acid volcanic (rhyodacite, rhyolite and pyroclastic). Continental basalts can be also intercalated with quartzites and siltstones, but always overlying the acid volcanic sequence. This bimodal volcanism has the same age (~1770 Ma) of the emplacement of shallow level A-type tin-bearing granite plutons occurred mainly along the eastern margin of the Araí Basin. Post-rift sedimentation is marked by the deposition of a heterolithic assemblage of stratified siltstones and quartzites. These rocks were deposited in transitional and shallow marine environments. Mudstone and carbonate lenses were deposited in the top of this phase, in outer shelf water with hummocky cross stratification.